

# SSPA's Using Reduced Conduction Angle Techniques on Wide-Bandgap Devices for Ultra High Efficiency, Phase I

Completed Technology Project (2007 - 2007)



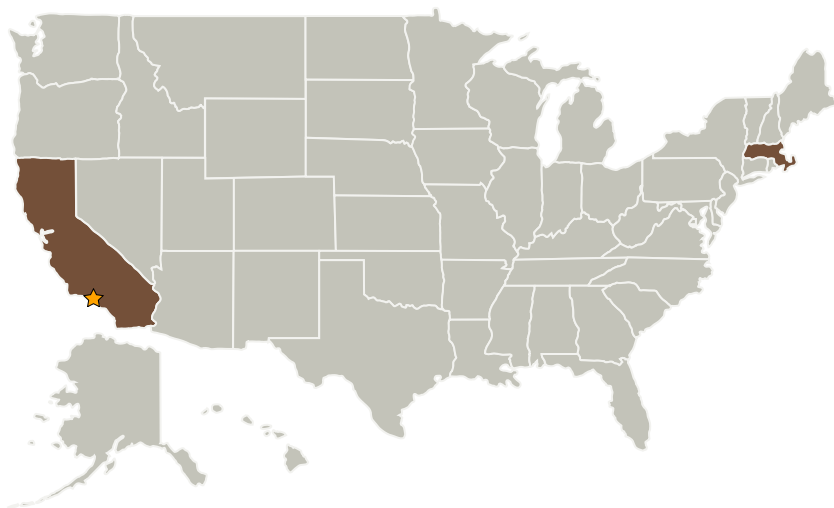
## Project Introduction

A novel approach is proposed for very efficient, very reliable, low weight, wide-bandgap medium power SSPAs for Space applications operating at 400 MHz and 8GHz.

## Anticipated Benefits

WBG devices offer higher power output, higher efficiency, and tolerance to higher temperature. Amplifiers made of WBG devices will ultimately replace amplifiers made GaAs devices used in many commercial communication systems. Those systems include: wireless infrastructure, to satellite ground terminals, point-to-point radios, etc. The projected number of terminals for those systems adds up to millions, representing a large market comparable to cellular and personal communication systems bands.

## Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★ Jet Propulsion Laboratory(JPL)	Lead Organization	NASA Center	Pasadena, California
Hittite Microwave Corporation	Supporting Organization	Industry	Chelmsford, Massachusetts



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## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Lead Center / Facility:

Jet Propulsion Laboratory (JPL)

### Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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### Primary U.S. Work Locations

California

Massachusetts

### Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

Carlos Torrez

**Project Manager:**

Celestino Jun Rosca

**Principal Investigator:**

David Helms

### Technology Areas

**Primary:**

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
  - └ TX05.2 Radio Frequency
    - └ TX05.2.2 Power-Efficiency